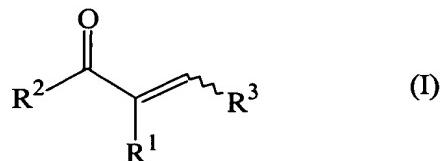


Amendments to the Claims

The following listing of claims replaces all previous claim listings and versions.

1. (Currently Amended) A process for the preparation of a compound of formula



wherein:

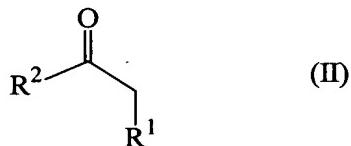
the wavy line indicates that the stereochemistry of the C=C double bond is not defined;

R^1 represents a hydrogen atom or a methyl group;

R^2 represents a methyl or ethyl group or a saturated or unsaturated gem-dimethyl C₆ ring, optionally substituted, provided that if R^1 is a hydrogen atom R^2 is a group having at least two carbon atoms; or said R^1 and R^2 taken together form a saturated or unsaturated gem-dimethyl C₆ ring, possibly substituted, or a saturated or unsaturated C₁₂ ring, said ring including the carbon atom of the carbonyl function and the carbon atom to which R^1 is bonded; and

R^3 represents a hydrogen atom, a C₁ to C₄ linear or branched alkyl or alkenyl group, a linear or branched C₉ alkadienyl radical, or a CH₂R group, R being a saturated or unsaturated gem-dimethyl C₅ ring that is optionally substituted;

by reacting a starting ketone of formula



wherein R^1 and R^2 have the same meaning as in formula (I),

with an aldehyde of formula



wherein R^3 has the same meaning as in formula (I),

in the presence of a metal complex of formula

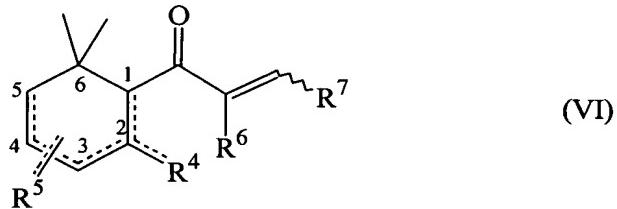


wherein M is a tetravalent metal cation selected from [[the]] group 4 of the periodic table consisting of Ti, Zr and Hf, R⁸ represents a C₁₋₆ linear or branched alkyl group, X represents an halide such as a Cl or F atom and the index n represents an integer from 1 to 3; and in the presence of a co-ingredient which is an alkyl or aromatic carboxylic acid anhydride containing 1 to 10 carbon atoms, BF₃ or an anhydrous salt selected from the group consisting of the sulfates, chlorides and bromides of a metal cation, wherein the metal cation is selected from the group consisting of Li⁺, Na⁺, K⁺, Cs⁺, Mg²⁺, Ni²⁺, Ca²⁺, Zn²⁺, Fe³⁺ and Al³⁺.

2. (original) The process of claim 1, wherein the ketone of formula (II) is selected from the group consisting of gem-dimethyl-cyclohexanones, gem-dimethyl-cyclohexenones and cyclododecanone, and the aldehyde of formula (III) selected from the group consisting of formaldehyde, acetaldehyde, 2-propenal and 2-butenal.

3. (original) The process of claim 1, wherein the ketone of formula (II) is methyl ethyl ketone and the aldehyde of formula (III) is 2,2,3-trimethyl-3-cyclopentene-1-acetaldehyde.

4. (original) The process of claim 1, wherein the enone is of formula



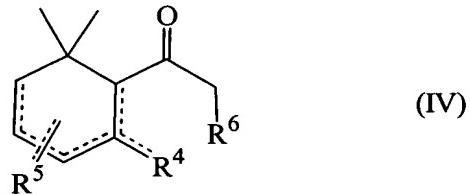
wherein:

the wavy line indicates that the stereochemistry of the C=C double bond is not defined and the dotted lines indicate a single or a double bond;

R⁴ and R⁵ represent, simultaneously or independently, a hydrogen atom or a methyl, ethyl methylene or ethylidene group;

R⁶ represents a hydrogen atom or a methyl group; and

R^7 represents a hydrogen atom or a C_1 to C_4 linear or branched alkyl or alkenyl group;
the ketone is of formula



wherein R^1 and R^2 have the same meaning as in formula (VI),
and the aldehyde is of formula



wherein R^4 has the same meaning as in formula (VI).

5. (original) The process of claim 1, wherein R^4 represents a methyl or methylene group, R^5 represents a hydrogen atom or a methyl or methylene group, R^6 represents a hydrogen atom and R^7 represents a methyl group.

6. (original) The process of claim 5, wherein the starting aldehyde (V) is acetaldehyde and the ketone (IV) is selected from the group consisting of 1-(2,6,6-trimethyl-1-cyclohexen-1-yl)-1-ethanone, 1-(2,6,6-trimethyl-2-cyclohexen-1-yl)-1-ethanone, 1-(2,6,6-trimethyl-3-cyclohexen-1-yl)-1-ethanone, 1-(2,2,6-trimethyl-3-cyclohexen-1-yl)-1-ethanone, 1-(2,2-dimethyl-6-methylene-1-cyclohexyl)-1-ethanone, 1-(2,6,6-trimethyl-1,3-cyclohexadien-1-yl)-1-ethanone, 1-(2,5,6,6-tetramethyl-1-cyclohexyl)-1-ethanone and 1-(2,2,6-trimethyl-3-methylene-1-cyclohexyl)-1-ethanone.

7. (original) The process of claim 5, wherein the starting ketone (IV) is in the form of a mixture of isomers.

8. (original) The process of claim 1, wherein M represents Ti(IV) or Zr(IV), R^8 represents a linear or branched C_{1-4} alkyl group, X represents a Cl atom and n is 2 or 3.

9. (original) The process of claim 1, wherein the co-ingredient is selected from the group consisting of acetic, propionic or butyric anhydride, BF_3 , anhydrous Na_2SO_4 or K_2SO_4 and an anhydrous chloride or bromide of Mg^{2+} , Fe^{3+} or Zn^{2+} .

10. (original) A catalytic system consisting of a metal complex of formula



wherein M is a tetravalent metal cation selected from the group consisting of Ti, Zr and Hf, R^8 represents a C_{1-6} linear or branched alkyl group, X represents a Cl or F atom and the index n represents an integer from 1 to 3.

11. (new) The process of claim 1, wherein the tetravalent metal cation is selected from the group consisting of Ti, Zr and Hf

12. (new) The process of claim 11, wherein the tetravalent metal cation is Ti.

13. (new) The process of claim 11, wherein the tetravalent metal cation is Zr.

14. (new) The process of claim 11, wherein the tetravalent metal cation is Hf.